National University of Singapore
DEPARTMENT OF COMPUTER SCIENCE
CS5239 Computer System Performance Analysis
2010/2011 - Semester II
http://www.comp.nus.edu.sg/~teoym/cs5239-11/

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Lecture: **Thu, 6.30pm, COM1/204**; Consultation hours: **Thu, 9-11am**

Description
This course aims to provide students with a working knowledge of computer performance evaluation. It covers fundamental techniques such as measurement and mathematical modeling. The module is divided into four main parts: capacity planning, measurement techniques and tools, analytic modeling techniques and case studies.

Topics include: performance analysis overview; capacity planning; measurement techniques and tools covering performance metrics, workload characterization, instrumentation; analytical modeling techniques covering operational analysis, stochastic queuing network analysis; principles of scalable performance; case studies.

Main Textbooks
- *The Art of Computer Systems Performance Analysis: Techniques for Experimental Design, Measurement, Simulation and Modeling*, R. Jain, John-Wiley, 1991 [Jain91].
- *Quantitative System Performance*, E.D. Lazowska et al., Prentice-Hall, 1984, out of print but available at http://www.cs.washington.edu/homes/lazowska/qsp/ [Lazowska84].
- *Measuring Computer Performance – A Practitioner's Guide*, D. J. Lilja, Cambridge University Press, 2000 [Lilja00].

Reference Books
- *Capacity Planning and Performance Modeling - From Mainframes to Client-Server Systems*, Daniel A. Menasce, et al., Prentice-Hall, 1994 [Menasce94].
- *Capacity Planning for Web Performance – Metrics, Models & Methods*, D.A. Menasce, et al., Prentice-Hall, 1998 [Menasce98]
- *Introduction to Parallel Computing*, A. Grama, et al., Addison-Wesley, 2nd Edition, 2003. [Grama03]

Module Assessment:
- continuous assessment - 60%
- final examination - 40% (open book exam)

Course Schedule: Please refer to course webpage for latest version.

Remarks
If you have any questions or suggestions, please feel free to approach me.